

ENGINE 2 SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUEL INJECTION (FUEL SYSTEMS) FU(SOHCw/oOBD)

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES) EC(SOHCw/oOBD)

EXHAUST EX(SOHCw/oOBD)

IGNITION IG(SOHCw/oOBD)

ENGINE(DIAGNOSTICS) EN(SOHCw/oOBD)

FUEL INJECTION (FUEL SYSTEMS) FU(DOHC TURBO)

EMISSION CONTROL (AUX. EMISSION CONTROL DEVICES) EC(DOHC TURBO)

INTAKE (INDUCTION) IN(DOHC TURBO)

MECHANICAL ME(DOHC TURBO)

EXHAUST EX(DOHC TURBO)

IGNITION IG(DOHC TURBO)

ENGINE (DIAGNOSTICS) EN(DOHC TURBO)

EXHAUST

EX(SOHCw/oOBD)

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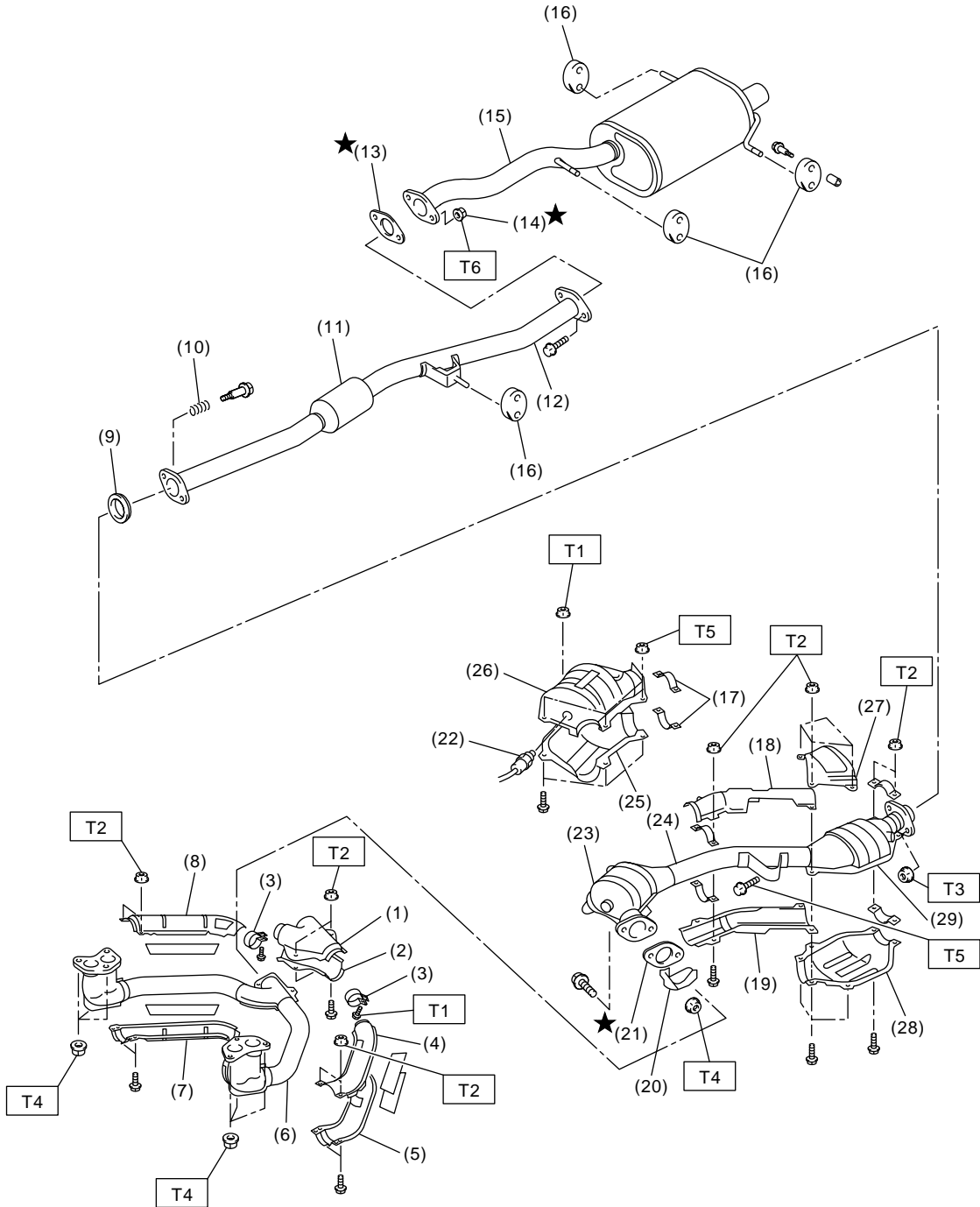
GENERAL DESCRIPTION

EXHAUST

1. General Description

A: COMPONENT

1. WITH CATALYTIC CONVERTER (1600CC MODEL)



EN0362

GENERAL DESCRIPTION

EXHAUST

(1) Upper front exhaust pipe cover CTR	(14) Self-locking nut	(27) Upper rear catalytic converter cover
(2) Lower front exhaust pipe cover CTR	(15) Muffler	(28) Lower rear catalytic converter cover
(3) Clamp	(16) Cushion rubber	(29) Rear catalytic converter
(4) Upper front exhaust pipe cover LH	(17) Lower clamp	
(5) Lower front exhaust pipe cover LH	(18) Upper center exhaust pipe cover	
(6) Front exhaust pipe	(19) Lower center exhaust pipe cover	
(7) Lower front exhaust pipe cover RH	(20) Protector	
(8) Upper front exhaust pipe cover RH	(21) Gasket	
(9) Gasket	(22) Oxygen sensor	
(10) Spring	(23) Front catalytic converter	
(11) Chamber	(24) Center exhaust pipe	
(12) Rear exhaust pipe	(25) Lower front catalytic converter cover	
(13) Gasket	(26) Upper front catalytic converter cover	

Tightening torque: N·m (kgf-m, ft-lb)

T1: 8 (0.8, 5.8)

T2: 13 (1.3, 9.4)

T3: 18 (1.8, 13.0)

T4: 30 (3.1, 22.4)

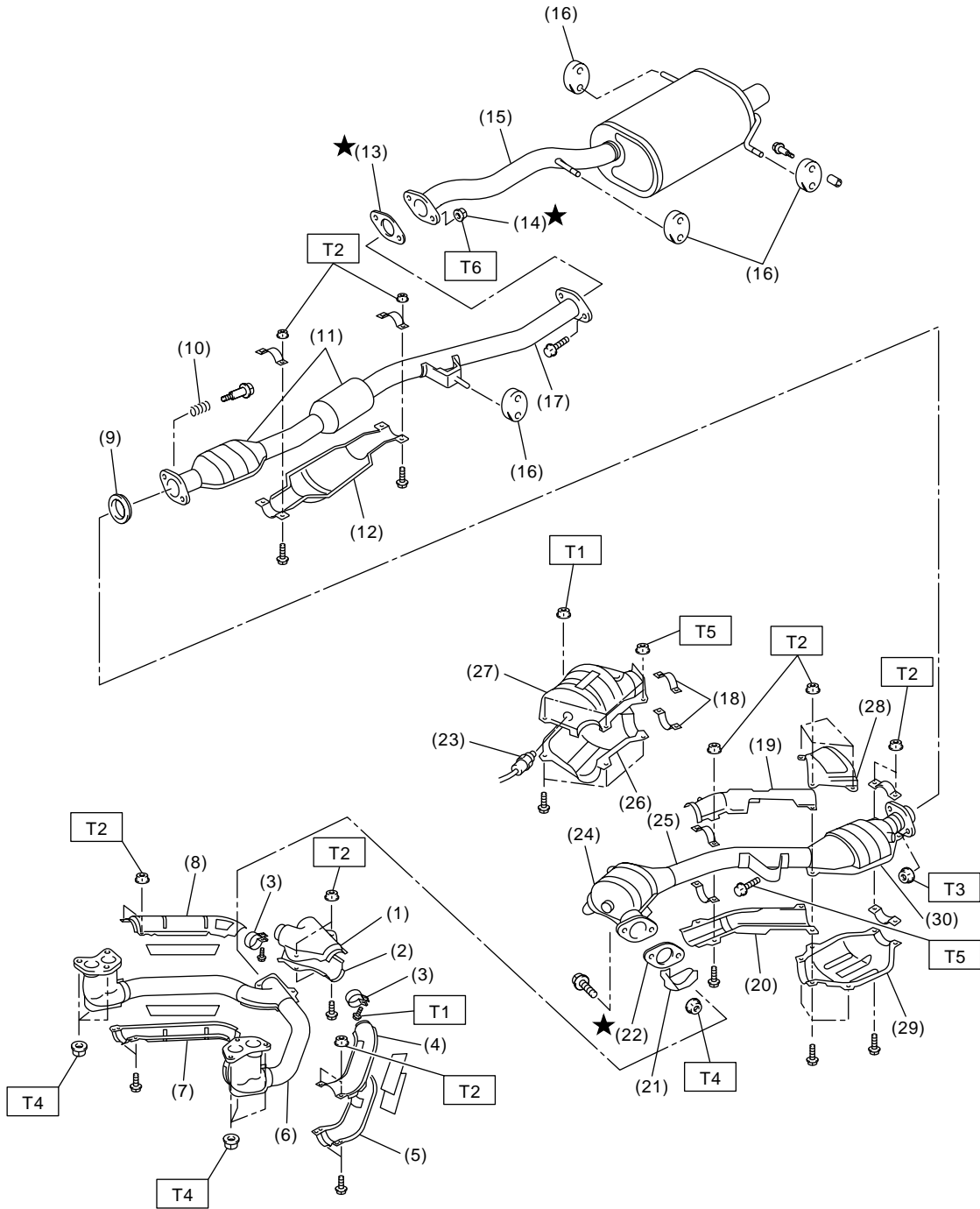
T5: 35 (3.6, 26.0)

T6: 48 (4.9, 35.4)

GENERAL DESCRIPTION

EXHAUST

2. WITH CATALYTIC CONVERTER (2000CC MODEL)



EN0363

GENERAL DESCRIPTION

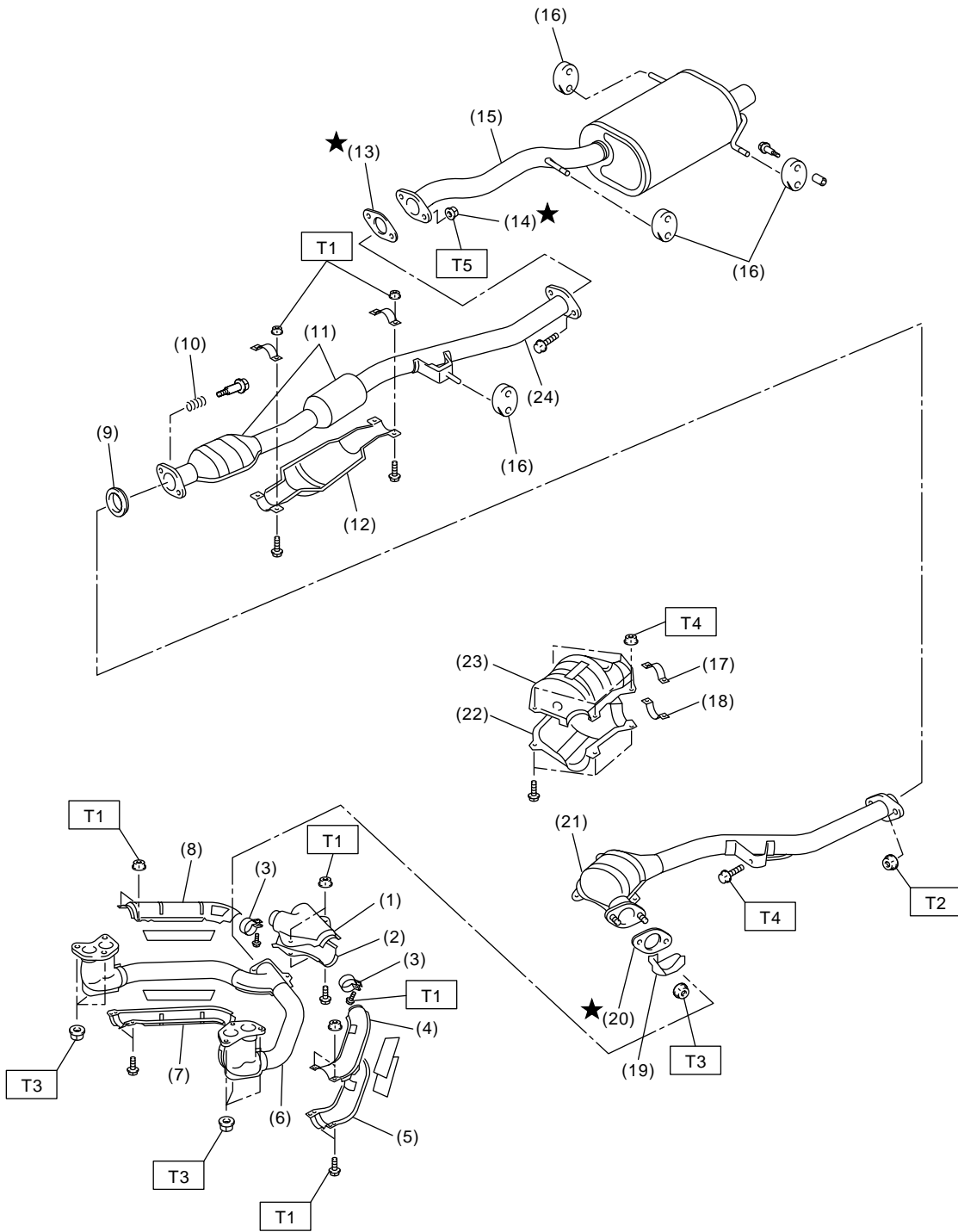
EXHAUST

(1) Upper front exhaust pipe cover CTR	(14) Self-locking nut	(27) Upper front catalytic converter cover
(2) Lower front exhaust pipe cover CTR	(15) Muffler	(28) Upper rear catalytic converter cover
(3) Clamp	(16) Cushion rubber	(29) Lower rear catalytic converter cover
(4) Upper front exhaust pipe cover LH	(17) Rear exhaust pipe	
(5) Lower front exhaust pipe cover LH	(18) Lower slant	
(6) Front exhaust pipe	(19) Upper center exhaust pipe cover	
(7) Lower front exhaust pipe cover RH	(20) Lower center exhaust pipe cover	
(8) Upper front exhaust pipe cover RH	(21) Protector	<hr/> Tightening torque: N·m (kgf-m, ft-lb)
(9) Gasket	(22) Gasket	T1: 8 (0.8, 5.8)
(10) Spring	(23) Oxygen sensor	T2: 13 (1.3, 9.4)
(11) Chamber	(24) Front catalytic converter	T3: 18 (1.8, 13.0)
(12) Rear exhaust pipe cover	(25) Center exhaust pipe	T4: 30 (3.1, 22.4)
(13) Gasket	(26) Lower front catalytic converter cover	T5: 35 (3.6, 26.0)
		T6: 48 (4.9, 35.4)

GENERAL DESCRIPTION

EXHAUST

3. WITHOUT CATALYTIC CONVERTER



EN0364

GENERAL DESCRIPTION

EXHAUST

(1) Upper front exhaust pipe cover CTR	(10) Spring	(21) Center exhaust pipe
(2) Lower front exhaust pipe cover CTR	(11) Chamber	(22) Lower center exhaust pipe cover
(3) Clamp	(12) Rear exhaust pipe cover	(23) Upper center exhaust pipe cover
(4) Upper front exhaust pipe cover LH	(13) Gasket	(24) Rear exhaust pipe
(5) Lower front exhaust pipe cover LH	(14) Self-locking nut	
(6) Front exhaust pipe	(15) Muffler	<hr/> Tightening torque: N·m (kgf-m, ft-lb)
(7) Lower front exhaust pipe cover RH	(16) Cushion rubber	T1: 13 (1.3, 9.4)
(8) Upper front exhaust pipe cover RH	(17) Upper clamp	T2: 18 (1.8, 13.0)
(9) Gasket	(18) Lower clamp	T3: 30 (3.1, 22.4)
	(19) Protector	T4: 35 (3.6, 26.0)
	(20) Gasket	T5: 48 (4.9, 35.4)

GENERAL DESCRIPTION

EXHAUST

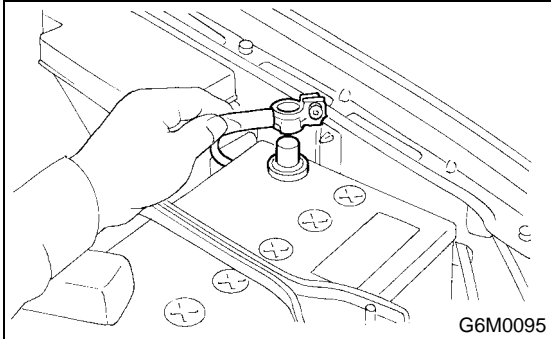
B: CAUTION

- Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn your hands, because each part on the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or safety stands at the specified points.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect negative terminal from battery.

2. Front Exhaust Pipe

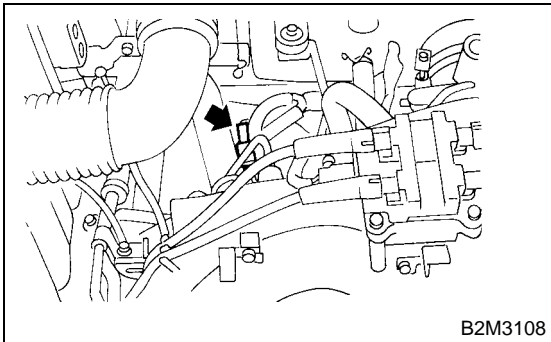
A: REMOVAL

1) Disconnect battery ground cable.



G6M0095

2) Disconnect oxygen sensor connector. (With catalytic converter)



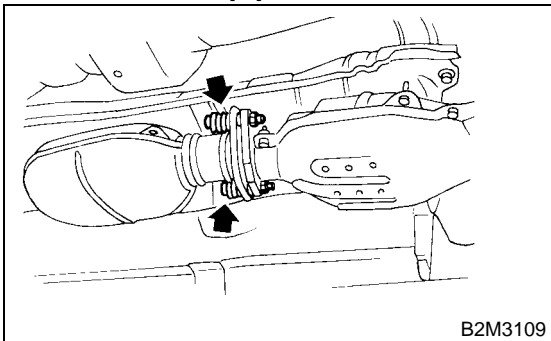
B2M3108

3) Lift-up the vehicle.

4) Separate front and center exhaust pipe assembly from rear exhaust pipe.

WARNING:

Be careful, exhaust pipe is hot.



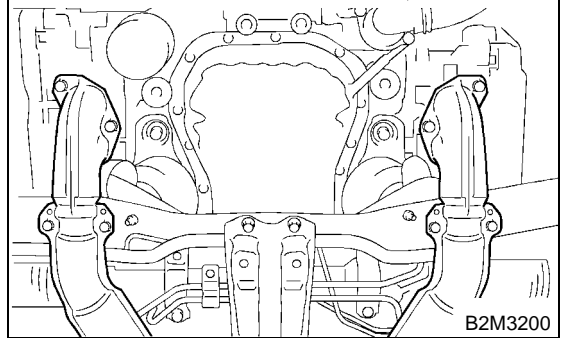
B2M3109

5) Remove under cover.

6) Remove bolts which hold front exhaust pipe onto cylinder heads.

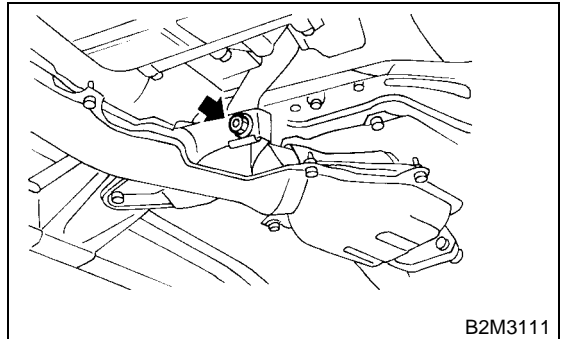
CAUTION:

Be careful not to pull down front and center exhaust pipe assembly.



B2M3200

7) Remove bolt which installs front and center exhaust pipe assembly to hanger bracket.



B2M3111

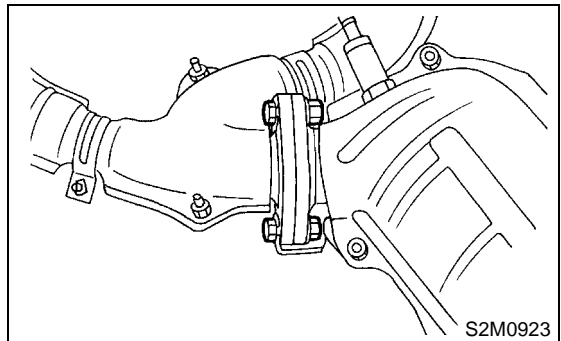
8) Remove front and center exhaust pipe assembly from the vehicle.

CAUTION:

- Be careful not to let front and center exhaust pipe assembly fall off when removing as it is quite heavy.

- After removing front and center exhaust assembly, do not apply excessive pulling force on rear exhaust pipe.

9) Separate front exhaust pipe from center exhaust pipe.



S2M0923

FRONT EXHAUST PIPE

EXHAUST

B: INSTALLATION

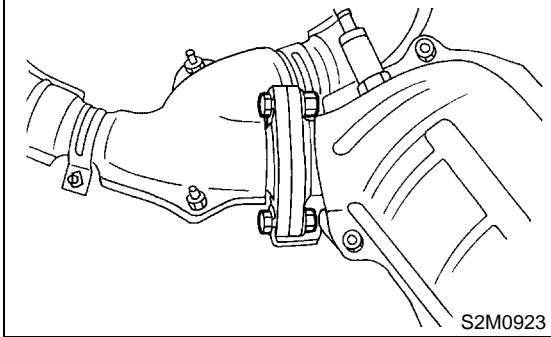
1) Install front exhaust pipe to center exhaust pipe.

CAUTION:

Replace gaskets with new ones.

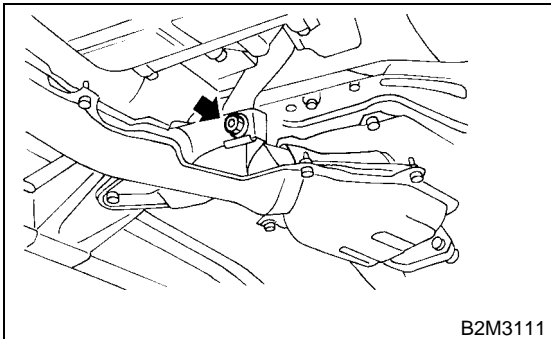
Tightening torque:

30 N·m (3.1 kgf-m, 22.4 ft-lb)



2) Install front and center exhaust pipe assembly to the vehicle.

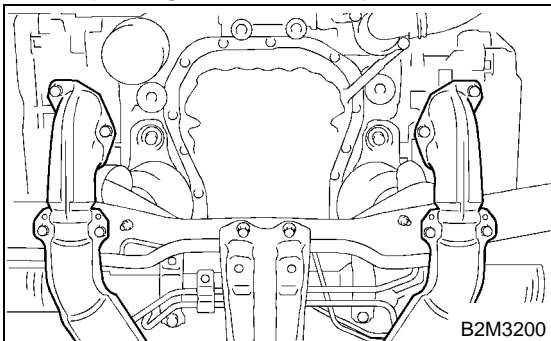
3) Temporarily tighten bolt which installs front and center exhaust pipe assembly to hanger bracket.



4) Tighten bolts which hold front exhaust pipe onto cylinder heads.

Tightening torque:

30 N·m (3.1 kgf-m, 22.4 ft-lb)

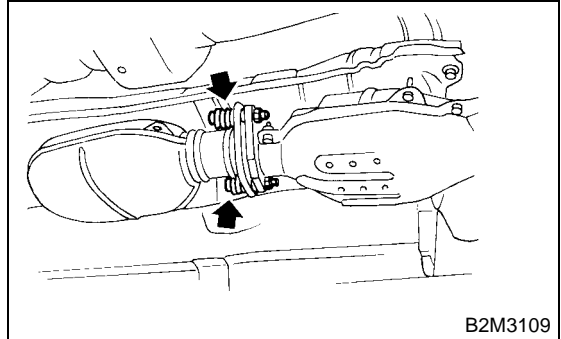


5) Install under cover.

6) Tighten bolts which install front and center exhaust pipe assembly to rear exhaust pipe.

Tightening torque:

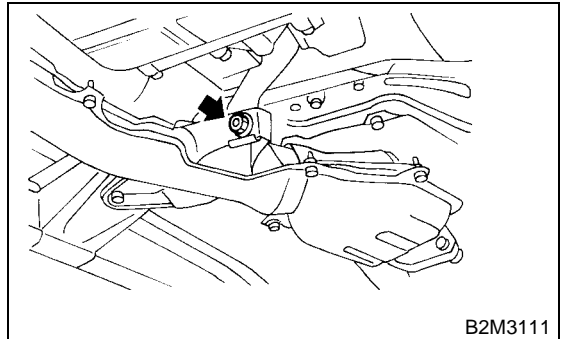
18 N·m (1.8 kgf-m, 13.0 ft-lb)



7) Tighten bolt which holds front and center exhaust pipe assembly to hanger bracket.

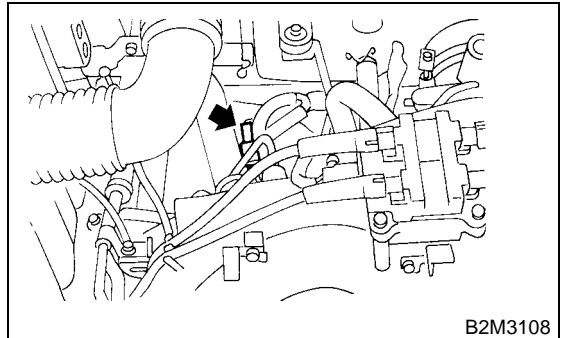
Tightening torque:

35 N·m (3.6 kgf-m, 26.0 ft-lb)

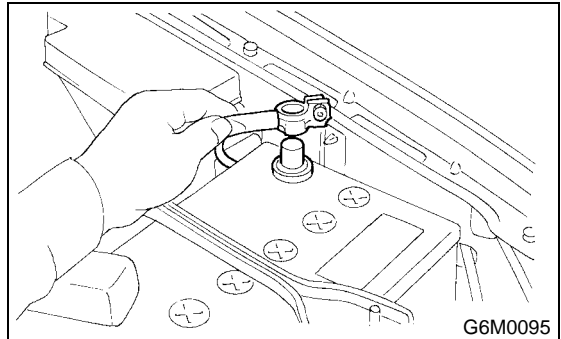


8) Lower the vehicle.

9) Connect oxygen sensor connector. (With catalytic converter)



10) Connect battery ground cable.



C: INSPECTION

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

3. Center Exhaust Pipe

A: REMOVAL

After removing the center and front exhaust pipes as one unit, separate them. Refer to the procedure for removing the front exhaust pipe. <Ref. to EX(SOHCw/oOBD)-9, REMOVAL, Front Exhaust Pipe.>

B: INSTALLATION

Install the center exhaust pipe and front exhaust pipe as one unit. Refer to the procedure for installing the front exhaust pipe. <Ref. to EX(SOHCw/oOBD)-10, INSTALLATION, Front Exhaust Pipe.>

C: INSPECTION

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.

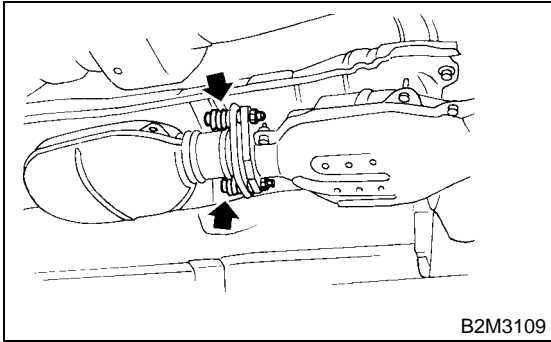
4. Rear Exhaust Pipe

A: REMOVAL

1) Separate rear exhaust pipe from center exhaust pipe.

CAUTION:

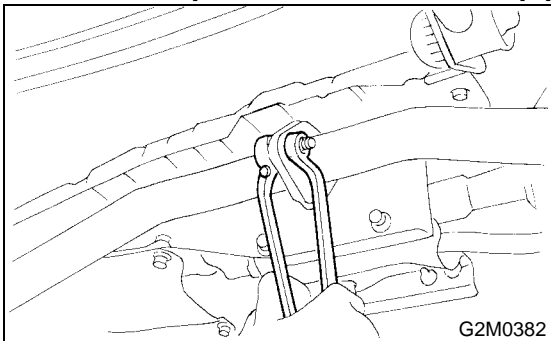
Be careful, exhaust pipe is hot.



2) Separate rear exhaust pipe from muffler.

CAUTION:

Be careful not to pull down rear exhaust pipe.



3) Remove rear exhaust pipe.

B: INSTALLATION

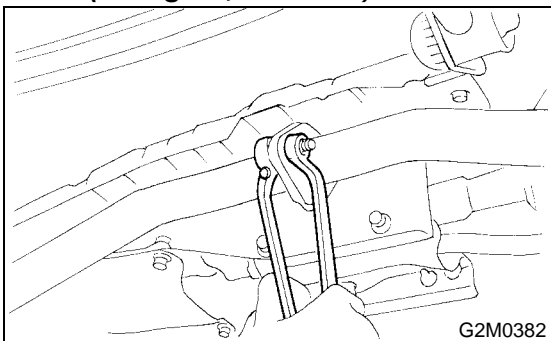
CAUTION:

Replace gaskets with new ones.

1) Install rear exhaust pipe to muffler.

Tightening torque:

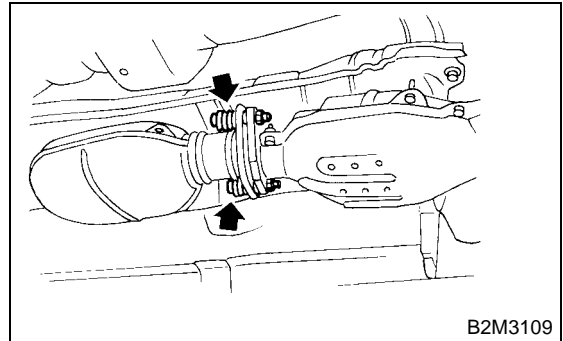
48 N·m (4.9 kgf·m, 35.4 ft·lb)



2) Install rear exhaust pipe to center exhaust pipe.

Tightening torque:

18 N·m (1.8 kgf·m, 13.0 ft·lb)



C: INSPECTION

1) Make sure there are no exhaust leaks from connections and welds.

2) Make sure there are no holes or rusting.

3) Make sure the cushion rubber is not worn or cracked.

MUFFLER

EXHAUST

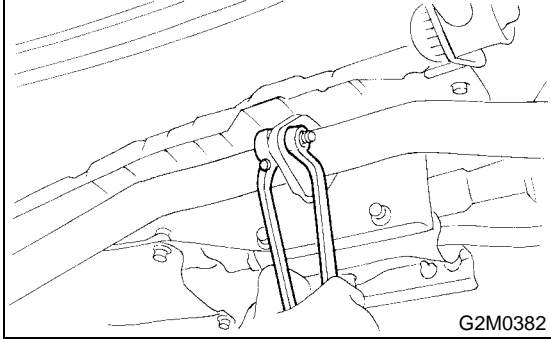
5. Muffler

A: REMOVAL

1) Separate muffler from rear exhaust pipe.

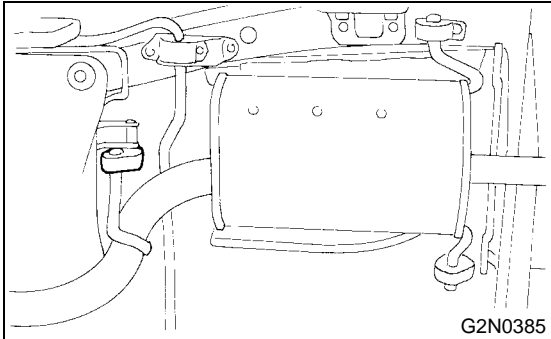
CAUTION:

Be careful, exhaust pipe is hot.



2) Apply a coat of SUBARU CRC to mating area of rubber cushions in advance.

SUBARU CRC (Part No. 004301003)



3) Remove front, left, and right rubber cushion, and detach muffler assembly.

B: INSTALLATION

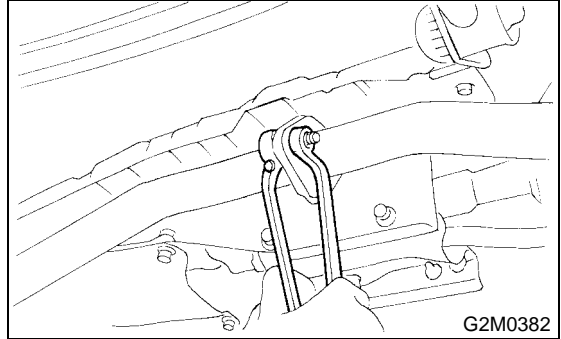
1) Install in the reverse order of removal.

CAUTION:

Replace gasket with a new one.

Tightening torque:

48 N·m (4.9 kgf-m, 35.4 ft-lb)



C: INSPECTION

- 1) Make sure there are no exhaust leaks from connections and welds.
- 2) Make sure there are no holes or rusting.
- 3) Make sure the cushion rubber is not worn or cracked.